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Two new species of *Repetophragma* from the Iberian Peninsula

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Abstract — *Repetophragma fragile* and *R. ibericum,* two new microfungi collected on plant debris, are described and illustrated. *Repetophragma fragile* is distinguished by variable, subnavicular, obovoid to subrhomboidal, collapsing, 0–1-septate, pale brown conidia often with faint bands or irregular spots on the surface. *Repetophragma ibericum* is characterized by turbinate to globose, mostly 2-septate, guttulate conidia, with brown central cell and paler brown end cells.

Key words —asexual fungi, systematics, litter

Repetophragma Subram. was erected to accommodate *Sporidesmium* species with euseptate conidia produced on monoblastic, integrated, indeterminate conidiogenous cells with several percurrent extensions (Subramanian 1992). Castañeda-Ruiz et al. (2011) provided an illustrated update and key to *Repetophragma* species, adding another species and making twelve new combinations. During two field expeditions in Spain (to Burgos, 2010) and Portugal (to Minho province, 2011), more than 300 samples of dead plant material colonized by anamorphic fungi were collected. Plant debris was treated according to Castañeda-Ruiz (2005) and examined periodically under the stereomicroscope for a 2-month period. Semi-permanent and permanent microscope slides of fungi growing on the natural substrate were mounted in lactic acid 85% and polyvinyl alcohol and examined under the light microscope. Photomicrographs were obtained with a Zeiss AXIO Imager M1 light microscope (Göttingen, Germany). Among these 300 samples two

undescribed *Repetophragma* species were collected, which are herein described and illustrated.

Taxonomy

Repetophragma fragile R.F. Castañeda, Hern.-Rest., Gené & Guarro, **sp. nov.**

MycoBank MB802412 Figs 1, 2

Differs from *Repetophragma biseptatum* by having variable, fragile, very often collapsed, 0–1-septate, pale brown conidia, sometimes with faint bands or irregular spots on the surface.

Type: Spain, Burgos, Salas de los Infantes, Rio Pedroso, 42°04′N 3°18′W, on submerged decaying wood of unidentified plant, 10 November 2010, coll. M. Hernández-Restrepo & J. Gené C10/126 (**Holotype**, CBS H-20750; **Isotype**, FMR 11581).

Etymology: Latin, *fragile*, referred to the delicate, very often collapsed conidia.

Colonies on the natural substrate effuse, hairy, brown. Mycelium superficial and immersed, composed of septate, branched, brown, smooth hyphae 1–2.5 µm diam. Conidiophores distinct, single, erect, straight or slightly geniculate toward the apex, 6–12-septate, with 4–8 annellations near the apex, 87–190 × 5–10 µm, smooth, brown at the base and pale brown toward the apex. Conidiogenous cells monoblastic, terminal, integrated, 5–20 × 5–8 µm, indeterminate, annellidic with numerous cyathiform enteroblastic percurrent extensions. Conidial secession schizolytic. Conidia solitary, variable, subnavicular, obovoid, mucronate to somewhat acute, long subrhomboidal, fragile, very often collapsed, 0–1-septate, pale brown, but sometimes with faint bands or irregular spots, slightly obscure or brown pigmented on the surface, 25–42 × 10–17 µm, truncate, 5–7.5 µm wide at the base, smooth-walled, dry. Teleomorph unknown.

Repetophragma fragile superficially resembles *R. biseptatum* (M.B. Ellis) Subram. (Subramanian 1992, Castañeda-Ruiz et al. 2011), but *R. biseptatum* produces navicular, 3-septate, smooth-walled conidia with brown to dark brown upper cells and subhyaline basal cell, 17–23 × 7–8 µm and cannot be confused with *R. fragile*.

Repetophragma ibericum R.F. Castañeda, Hern.-Rest., Gené & Guarro, **sp. nov.**

MycoBank MB802415 Figs 3, 4

Differs from *Repetophragma quadriloculare* by its globose to subturbinate, mostly 2-septate conidia, with dark brown or brown central cell and pale brown end cells.

Type: Portugal, Minho province, "Lagoas de Bertiandos", 41°46′N 8°38′W, on bark of *Eucalyptus globulus* Labill, 9 November 2011, R.F. Castañeda, M. Hernández- Restrepo, J. Gené & J. Mariné-Gené C11/55 (**Holotype**, HAL 2452 F; **Isotype**, FMR 12183).

Etymology: Latin, *ibericum*, in reference to Iberian Peninsula.

Fig. 1. *Repetophragma fragile* (ex holotype CBS H-20750):
a. Conidia. b, d. Conidiogenous cells and conidia. c. Conidiogenous cells. Bars = 10 μm.

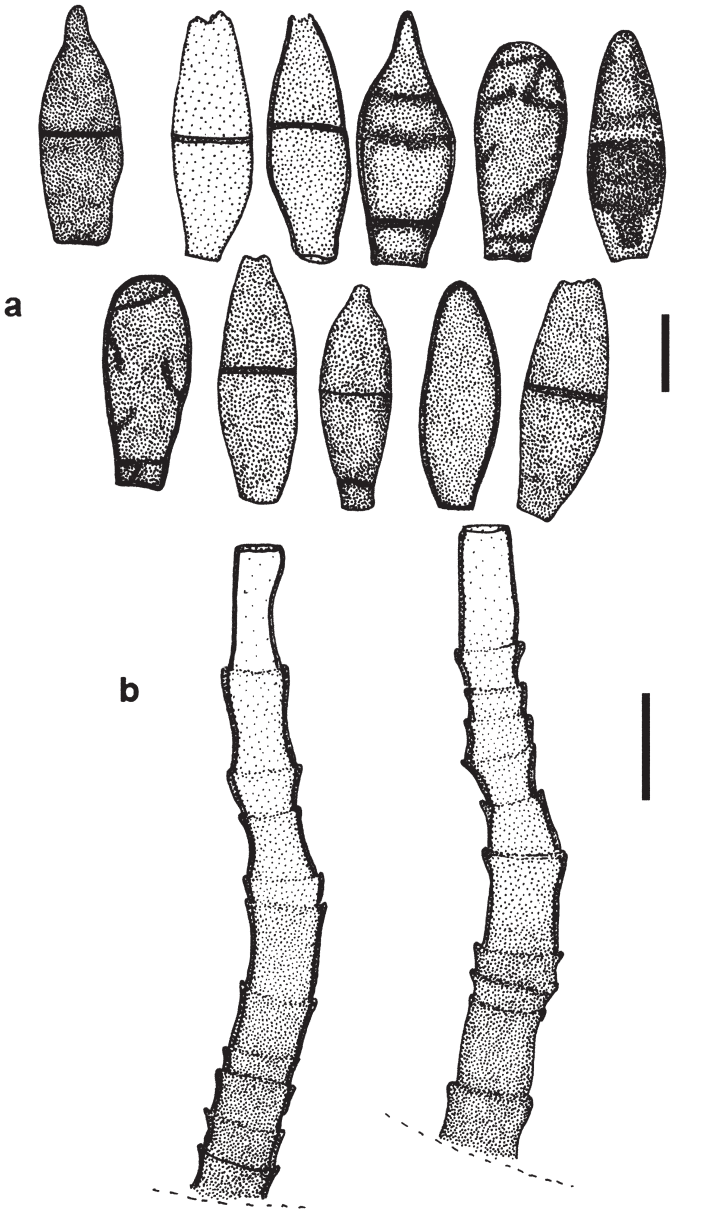

Fig. 2. *Repetophragma fragile* (ex holotype CBS H-20750): a. Conidia. b. Conidiogenous cells. Bars = 10 µm.

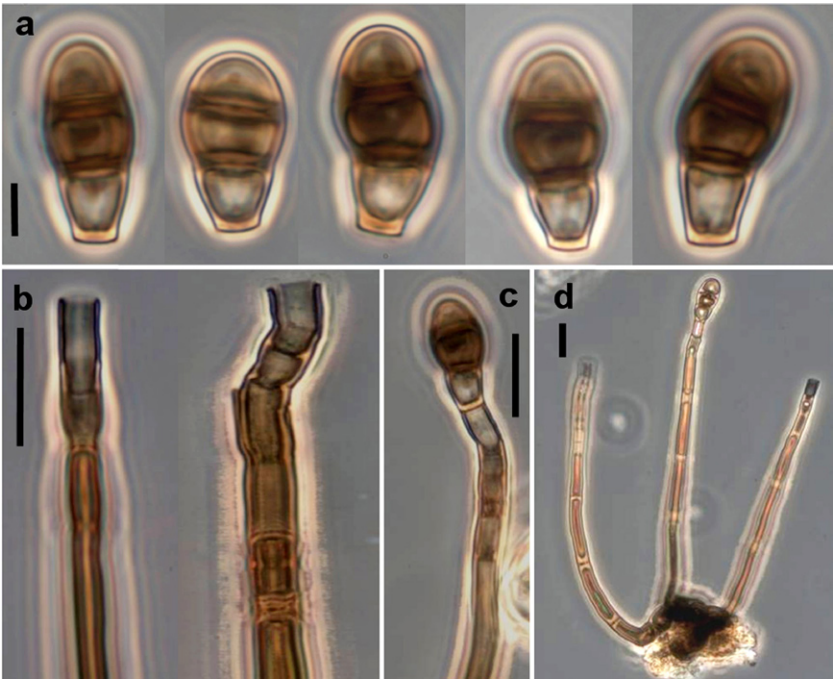

Fig. 3. *Repetophragma ibericum* (ex holotype HAL 2452F):
a. Conidia. b. Conidiogenous cells. c–d. Conidiophores, conidiogenous cells, and conidia.
Bars = 10 µm.

Colonies on the natural substrate effuse, hairy, black. Mycelium superficial and immersed, composed of septate, branched, brown, smooth hyphae, 3–4 µm diam. Conidiophores distinct, single or sometimes fasciculate, unbranched, erect, straight or slightly geniculate toward the apex, 4–7-septate, with up to 7 annellations near the apex, 100–130 × 4.5–7 µm, dark brown at the base and pale brown above. Conidiogenous cells monoblastic, terminal, integrated, indeterminate, annellidic with numerous cyathiform to infundibuliform enteroblastic percurrent extensions. Conidial secession schizolytic. Conidia solitary, turbinate to globose, with broad obconical to somewhat cuneate, truncate basal cell, (1–)2(–3)-septate, dark brown at the septa, with brown to dark brown central cell and pale brown end cells, 14–18 × 6–8 µm, smooth-walled, dry. Teleomorph unknown.

Repetophragma ibericum is somewhat similar to *R. quadriloculare* (Matsush.) R.F. Castañeda et al. (Castañeda-Ruiz et al. 2011), but the latter has larger, obovoid to subglobose, 3-septate, smooth-walled conidia with dark brown central and basal cells, and a pale brown apical cell, 16–21 × 8–13 µm, from

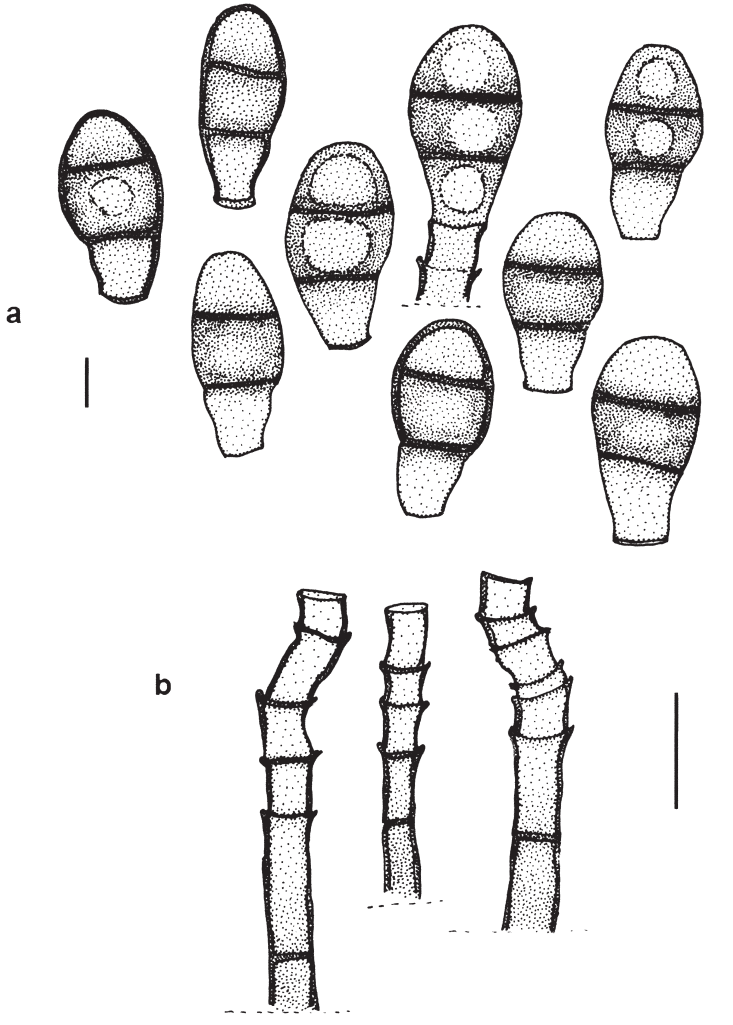

Fig. 4. *Repetophragma ibericum* (ex holotype HAL 2452F):
a. Conidia. b. Conidiogenous cells. Bars = 10 µm.

cultures on corn meal agar (conidia larger, 20–24 × 11–14 µm on the natural substrate, according to Matsushima 1993), so the two species can be easily separated.

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